Johnson Reservoir
2011 Fall Survey Summary

Jared Lorensen, Fisheries Biologist

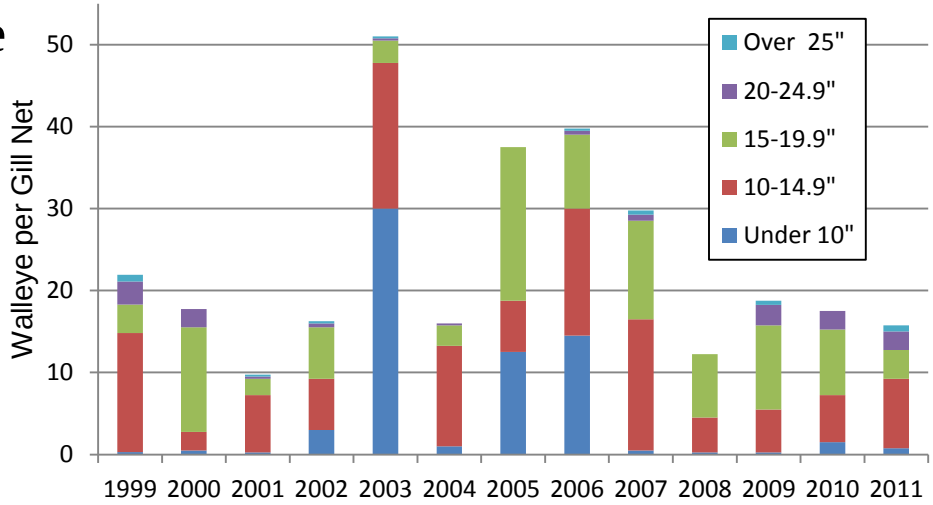
Johnson Reservoir is a major reservoir on Central Nebraska Public Power & Irrigation District's (CNPPID) Supply Canal System downstream of Plum Creek Reservoir. Notice its fluvial location at http://www.cnppid.com/Assets/Supply_Canal.pdf. CNPPID manages Johnson Reservoir for hydroelectric power generation and irrigation purposes. There are unique fishing opportunities as a result of this functionality. Notice these aspects at http://outdoornebraska.ne.gov/Fishing/programs/lakemapping/pdfs/Johnson.pdf and track water fluctuations at http://www.cnppid.com/Elevation_Flows2.htm.

An angler survey will be conducted at Johnson Reservoir from April through October 2012 in cooperation with the Nebraska Cooperative Fish and Wildlife Research Unit housed at the University of Nebraska – Lincoln. Similar surveys have been conducted since 1996. They provide valuable data concerning angling pressure, catch and harvest rates and species sought. Please take the time to answer the questions posed by the clerk. Results from the 2011 Angler Survey are posted in another document similar to this.

Every fall the fishery of Johnson Reservoir is sampled using experimental gill nets, a method commonly used to sample species found primarily in open water. These nets are made of clear monofilament mesh strung between a weighted line and a floating line. This mesh ranges in size from ¾ of an inch to 3 inches and the nets are typically set perpendicular to the shoreline in 6 to 12 feet of depth during late afternoon with an orange floating buoy on the ends to deter boats from being entangled and for ease of retrieval. Gill nets create an invisible wall in the water column that fish cannot sense so they are entangled by their gills as they attempt to move through this mesh. Nets are set so that they are suspended through one evening, night and morning period before being pulled. In addition to gill nets, trap nets are used to sample shoreline oriented species such as crappie. These nets are set perpendicular to the shoreline and entrap fish by funneling them through a narrowing frame covered in 5/8" braided mesh. Biologists tend these nets similarly to gill nets.

Data collected from these surveys allow biologists to evaluate the population density, size structure, and growth rates for several species. This data provides valuable information to guide decision making scenarios that include fish species stocked, stocking rates and fishing regulations. Access stocking records at http://outdoornebraska.ne.gov/fishing/guides/fishguide/FGstocking.asp and access the 2011-2012 fishing guide at http://outdoornebraska.ne.gov/Fishing/guides/fishguide/pdf/FishGuide.pdf or pick up a print copy at your local vendor or NGPC office. This information also assists Game and Parks staff in guiding anglers to waterbodies that have their desired species and populations.

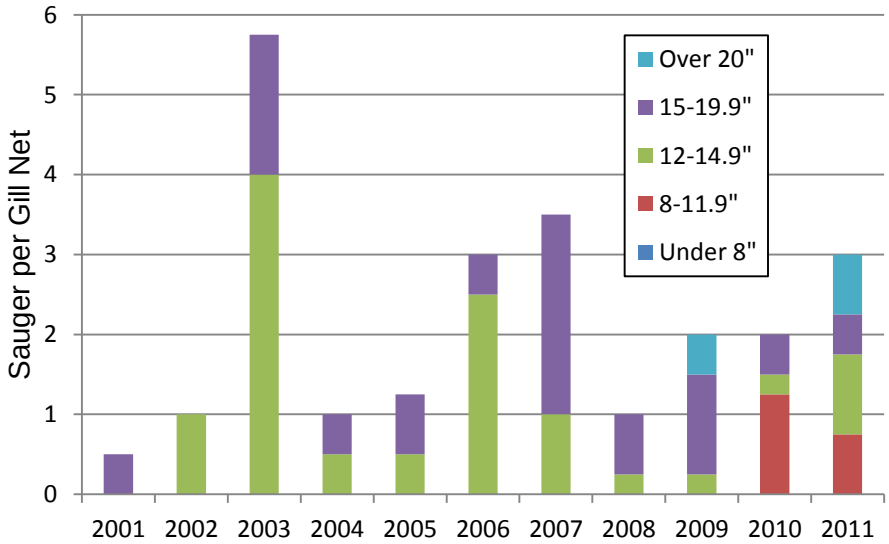
Walleye



Walleye abundance has remained stable the past three years, with a catch of approximately 16 per gill net in 2011. All size categories were represented by the survey including those over 25". Individuals 10-14.9" were most prevalent in the sample with most being 12-14". Typically this length comprises 50% or greater of the Johnson population. These fish will contribute to angler's harvest in 2012. Average length of collected walleye was 15.6" and the largest was over 28". Approximately 40% of the sample was larger than the 15" minimum length limit. A stocking of 218,900 walleye fingerlings is requested for 2012.

The walleye regulation at Johnson (in conjunction with sauger) includes a daily bag limit that may include four walleye greater than 15" with only one over 22".

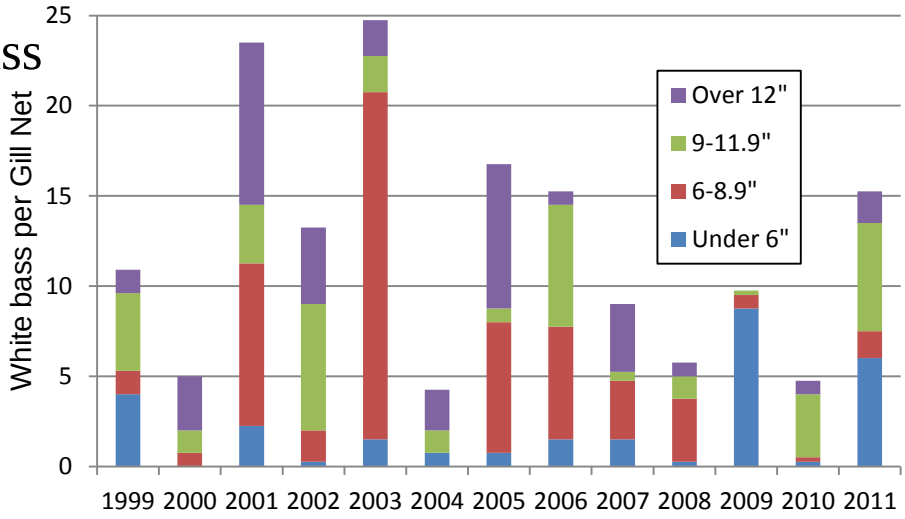
Sauger



Survey data indicates a diverse sauger size structure with 25% of those sampled being over 20". This diverse size structure indicates that a population is becoming established. These fish are reaching 15" after approximately three years of age. Sauger are not stocked in Johnson, but are stocked annually upstream in Jeffrey, Midway, Gallagher and Plum Creek reservoirs when possible. Fingerling and fry stockings in these upstream reservoirs are scheduled in 2012.

The sauger regulation at Johnson (in conjunction with walleye) includes a daily bag limit that may include four sauger/walleye greater than 15" with only one over 22". Access this online Fish Identification Tool for sauger identification help http://outdoornebraska.ne.gov/Fishing/guides/identification/default.asp.

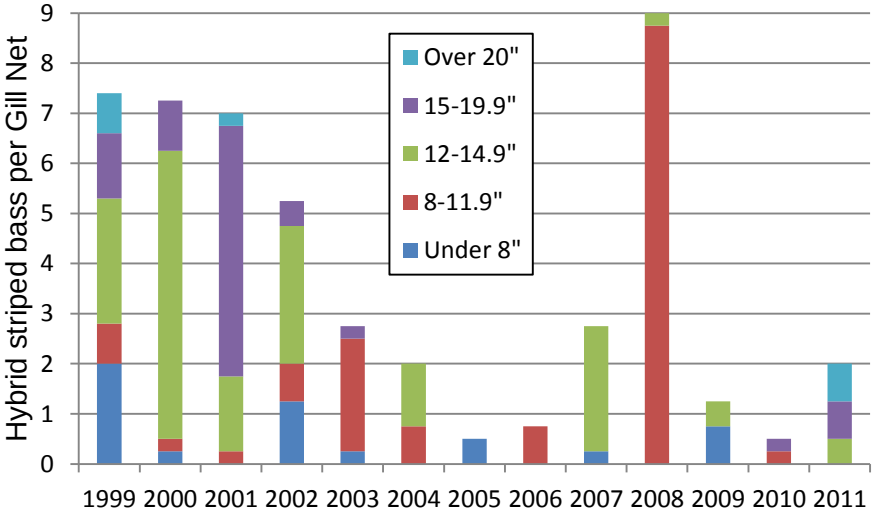
White bass



The 2011 white bass survey data may indicate a reverse in the five year declining pattern observed from 2005 through 2010. Approximately 15 white bass were sampled per gill net in 2011. This was the largest white bass sample since 2003 with 50% of those sampled being over 9". This observed population increase is likely a result of the strong 2009 year class. Another large young-of-year age class was sampled in 2011. This may bode well for future white bass angling at Johnson. Based on the 2011 netting results, it is expected that angler success will be improved in 2012.

The white bass regulations at Johnson (in conjunction with hybrid striped bass) includes a daily bag limit of 15 with no more than one greater than 18".

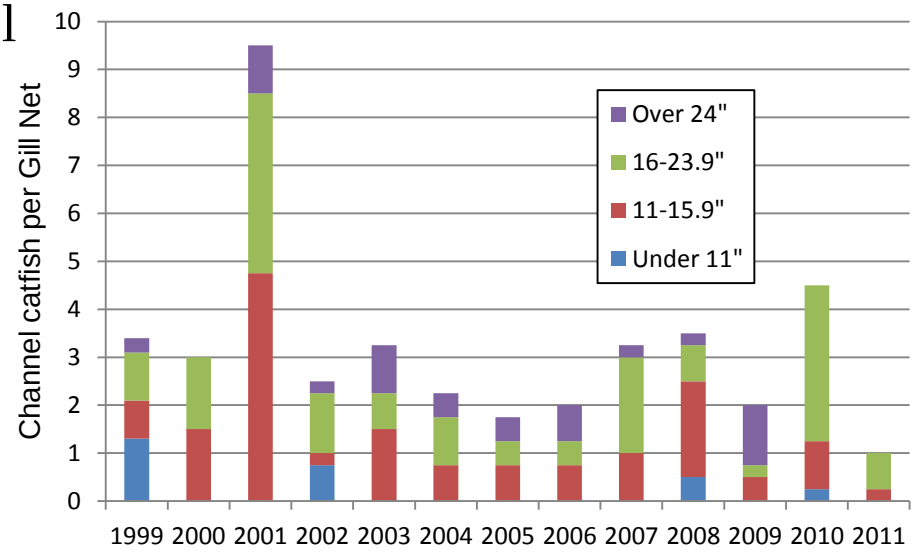
Hybrid Striped Bass



The hybrid striped bass population remains at a low level. Those captured during the 2011 survey ranged from 14 to 24 ½". Only one individual was sampled during the 2011 survey that originated from the large 2007 year class that was observed in 2008. The schooling behavior of hybrid striped bass often results in inconsistent survey results. A stocking is requested for 2012 at a rate of 10 fingerlings per acre totaling 43,780. The hybrid striped bass population is managed to provide trophy fish (greater than 20").

The hybrid striped bass regulations at Johnson (in conjunction with white bass) includes a daily bag limit of 15 with no more than one greater than 18". Access this online Fish Identification Tool for hybrid striped bass identification help http://outdoornebraska.ne.gov/Fishing/guides/identification/default.asp.

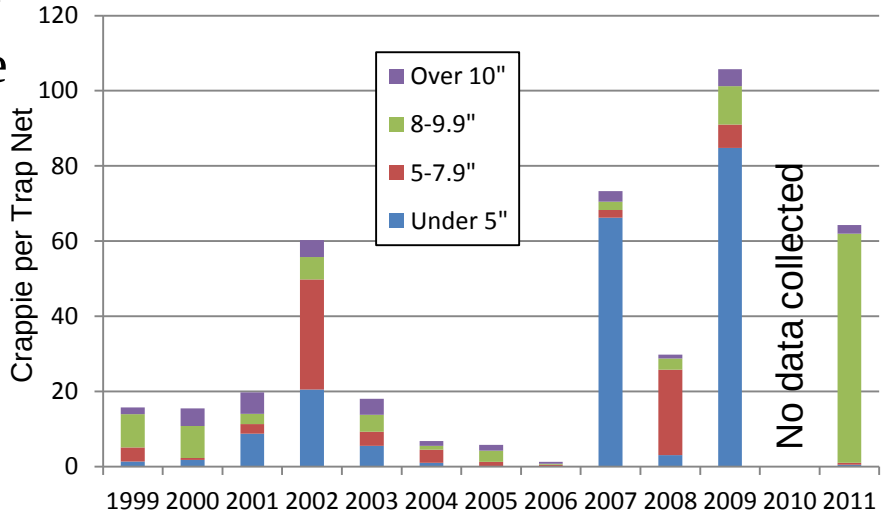
Channel Catfish



The observed increase in channel catfish in the 2010 survey was not seen again in the 2011 survey. The 2011 channel catfish sample was the smallest observed since before 1999. Only two length categories were observed with an average length of 19 ½". Channel catfish anglers had good success in 2011. Channel catfish angling success will continue in 2012 but may be diminished.

The channel catfish regulation at Johnson includes a daily bag limit of five with no length limit.

Crappie



The 2011 survey data indicates that the strong 2009 year class has recruited well. Approximately 80% of the "crappie" sampled consisted of black crappie with the remaining 20% being white crappie. Approximately 98% of all crappie sampled were over 8" with the mean length being 9.1". Unfortunately the 2011 survey did not uncover any young-of-year crappie. Crappie recruitment will be required to maintain the existing population of desired sizes. In 2010, low water levels prevented crappie data from being collected.

The crappie regulation at Johnson includes a daily bag limit of 15 (in conjunction with all panfish) with no length limit.

For additional information about the fishery of Johnson Reservoir please contact

Brad Newcomb, District Mgr. 308-865-5310, brad.newcomb@nebraska.gov
Jared Lorensen, Biologist 308-535-8025, jared.lorensen@nebraska.gov

Anglers and boaters need to be aware of **zebra and quagga mussels** while using Nebraska Lakes. While no mussels have been identified Johnson Reservoir, zebra mussels have been found at Zorinsky Lake in Omaha and are present in several reservoirs in Kansas and Colorado and pose a serious threat to our waterbodies. Monitoring was completed at several Nebraska reservoirs during 2011 and no evidence of mussels were found.

Invasive mussels will attach to almost any surface and have detrimental impacts on industry (power plants, water intakes, irrigation, etc), native fish and mussels, and recreational users (fouling boat motors, impacting beaches, etc). Invasive mussels cause an estimated $5 billion per year in economic impacts in the United States for monitoring and control efforts. Inadvertent transfer by humans is the major source of new infestation for zebra and quagga mussels; primarily by boats, boat trailers, and fishing gear. Boaters and anglers are reminded that it is important to **Clean, Drain and Dry** their equipment and boats before moving to different bodies of water. Anglers and boaters are encouraged to educate themselves on these and other aquatic invasive species. Find more information concerning zebra and quagga mussels at http://snr.unl.edu/invasives/ and http://100thmeridian.org/zebras.asp.